# UPLAND SHEEP: A CURSE OR VITAL TOOL?

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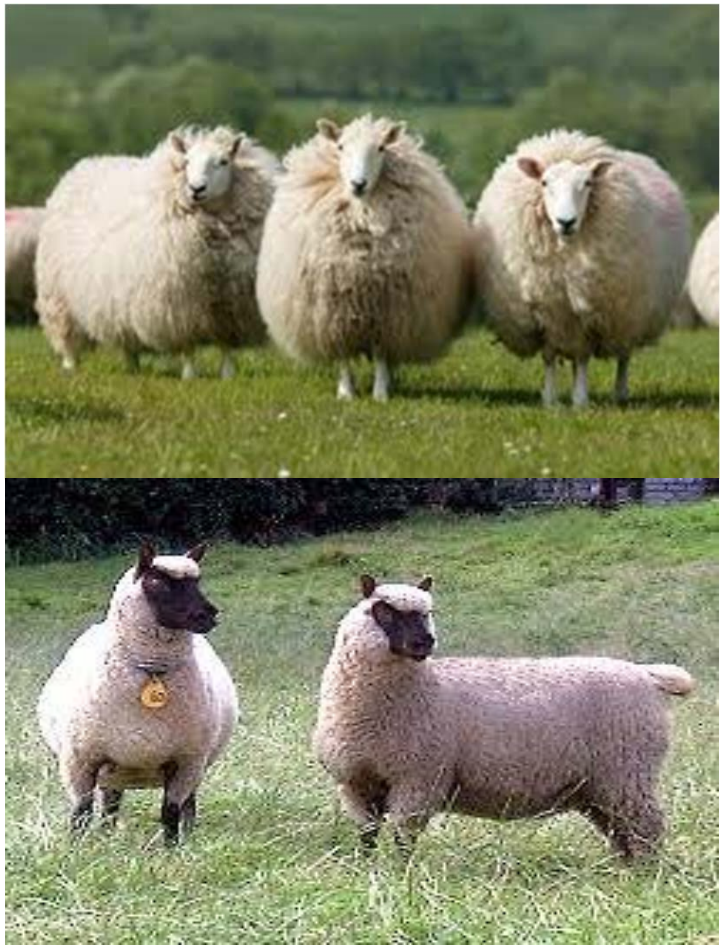
# OUTLINE

- The characteristics of upland sheep, how and what they eat
- Ecological context – what does this produce?

- Cumbrian Uplands: a case study
- Critique of upland sheep : pros and cons.

- A changing institutional context – what next for sheep?
- Some concluding thoughts



# WHAT IS AN ‘UPLAND’ SHEEP?

**Key Distinguishing Characteristics**

- Ability to cope with harshest of physical environments – *breed variation*
- Ruminants which break down cellulose on digestion

- Large rumens make upland sheep more efficient than lowland breed

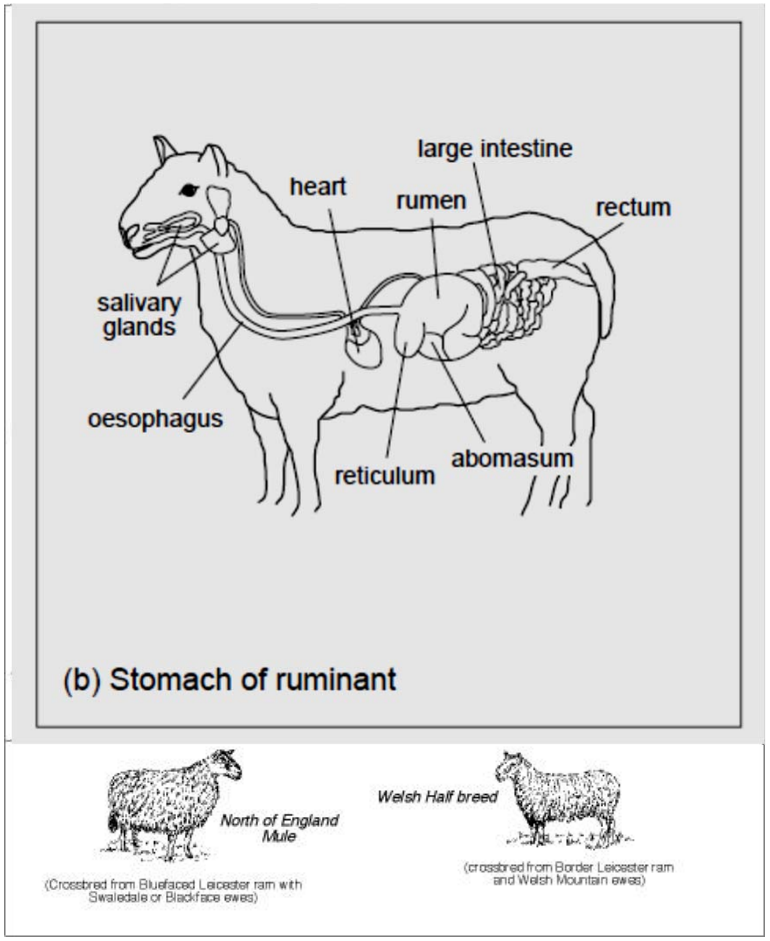
  BUT Produces large amount of offal no longer desired
- Cf. lowland sheep with smaller rumens which cannot break down

  poor quality forage species

- Farmers have responded by decreasing rumen capacity but this then

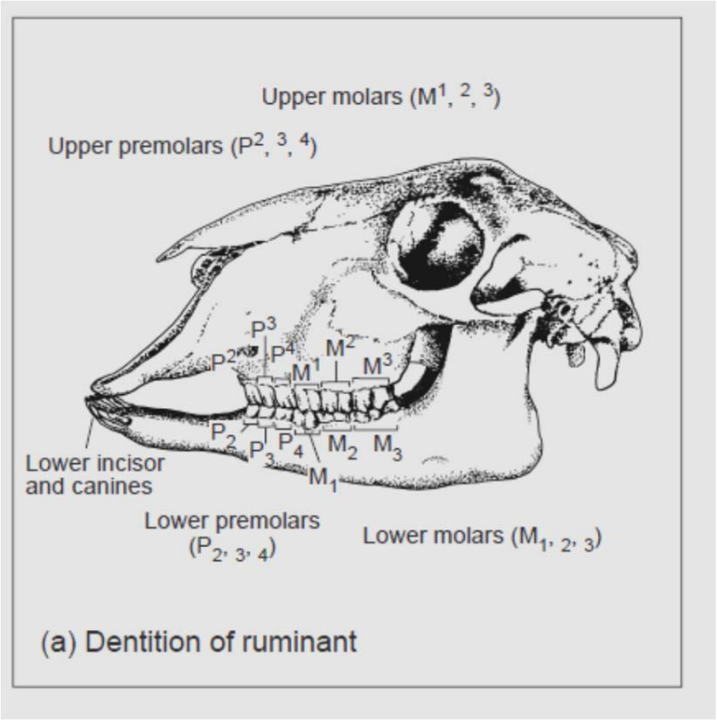
  requires supplementary feed on hillside creating other issues

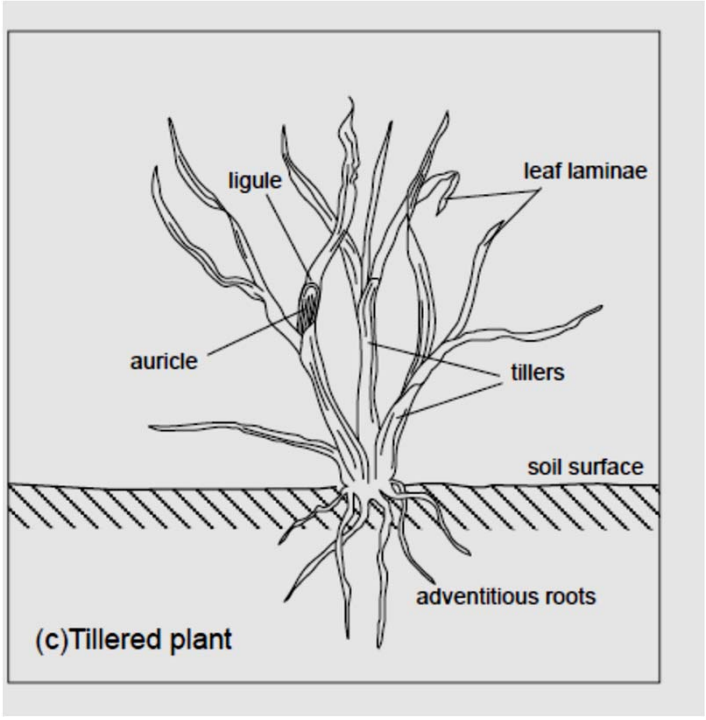
- Lower lambing rate than lowland breeds (lower returns)

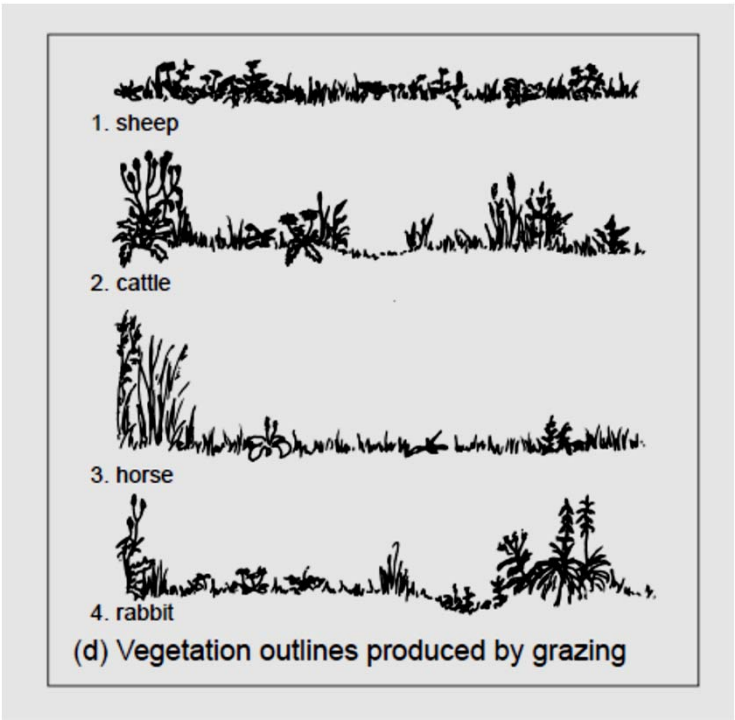



(Mansfield, 2011)

# HOW DO THEY EAT?




Front teeth cut to create leaf blades
Back teeth grind to prepare for digestion

Effect of cutting encourages regrowth – known as tillering, hence thicker sward

Effect of these two is a ‘lawn effect’ unlike other ruminants

# WHAT DO THEY EAT?

Sheep forage for different plants at different times of year

They preferentially graze habitats in order:

- Calcareous grassland
- Other grasslands
- Dwarf Shrub Heath (Ling)
- Blanket Bog

Hillsides are a ***mosaic*** of these habitats, thus some areas are grazed before others.

***Overgrazing*** is not universal.

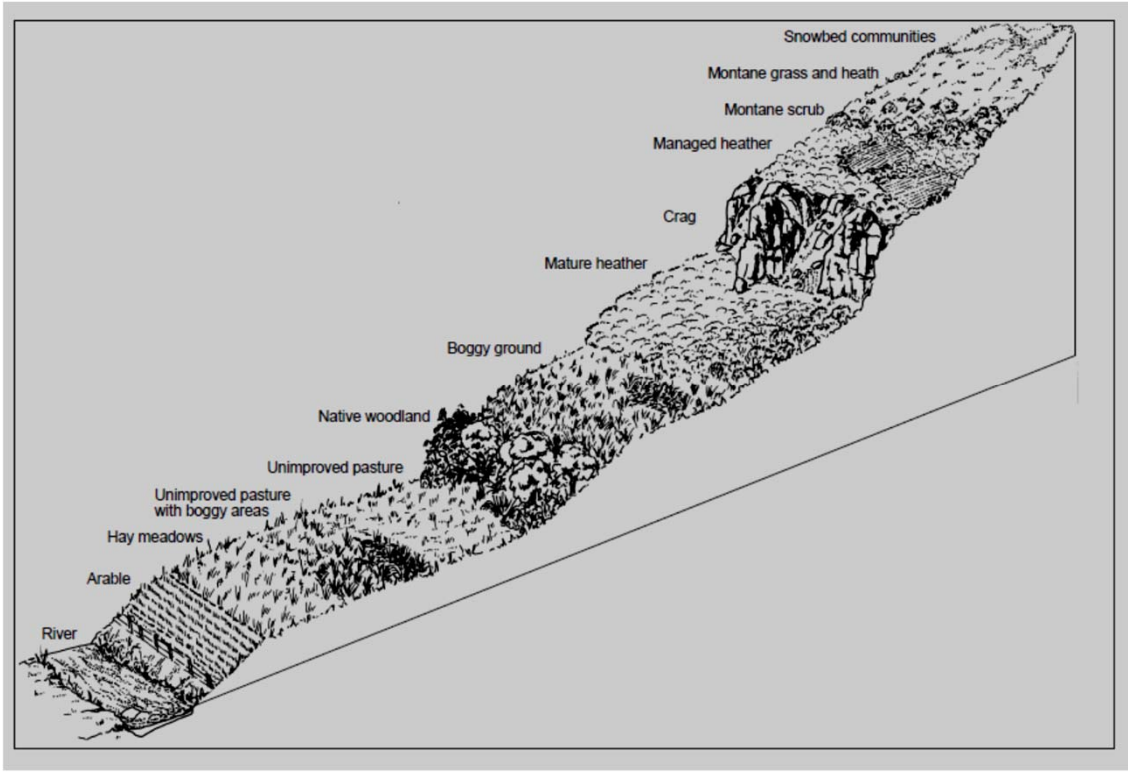
Other areas can be ***undergrazed***.

| Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ling | | | | | | | | | | | | |
| Hare's tail cotton grass | | | | | | | | | | | | |
| Purple moor grass | | | | | | | | | | | | |
| Deer grass | | | | | | | | | | | | |
| Cloudberry | | | | | | | | | | | | |
| Bilberry | | | | | | | | | | | | |
| Common cotton grass | | | | | | | | | | | | |
| Heath rush | | | | | | | | | | | | |
| Mat grass | | | | | | | | | | | | |
| Crowberry | | | | | | | | | | | | |
| Common Bent | | | | | | | | | | | | |
| Sheeps & Red Fescues | | | | | | | | | | | | |

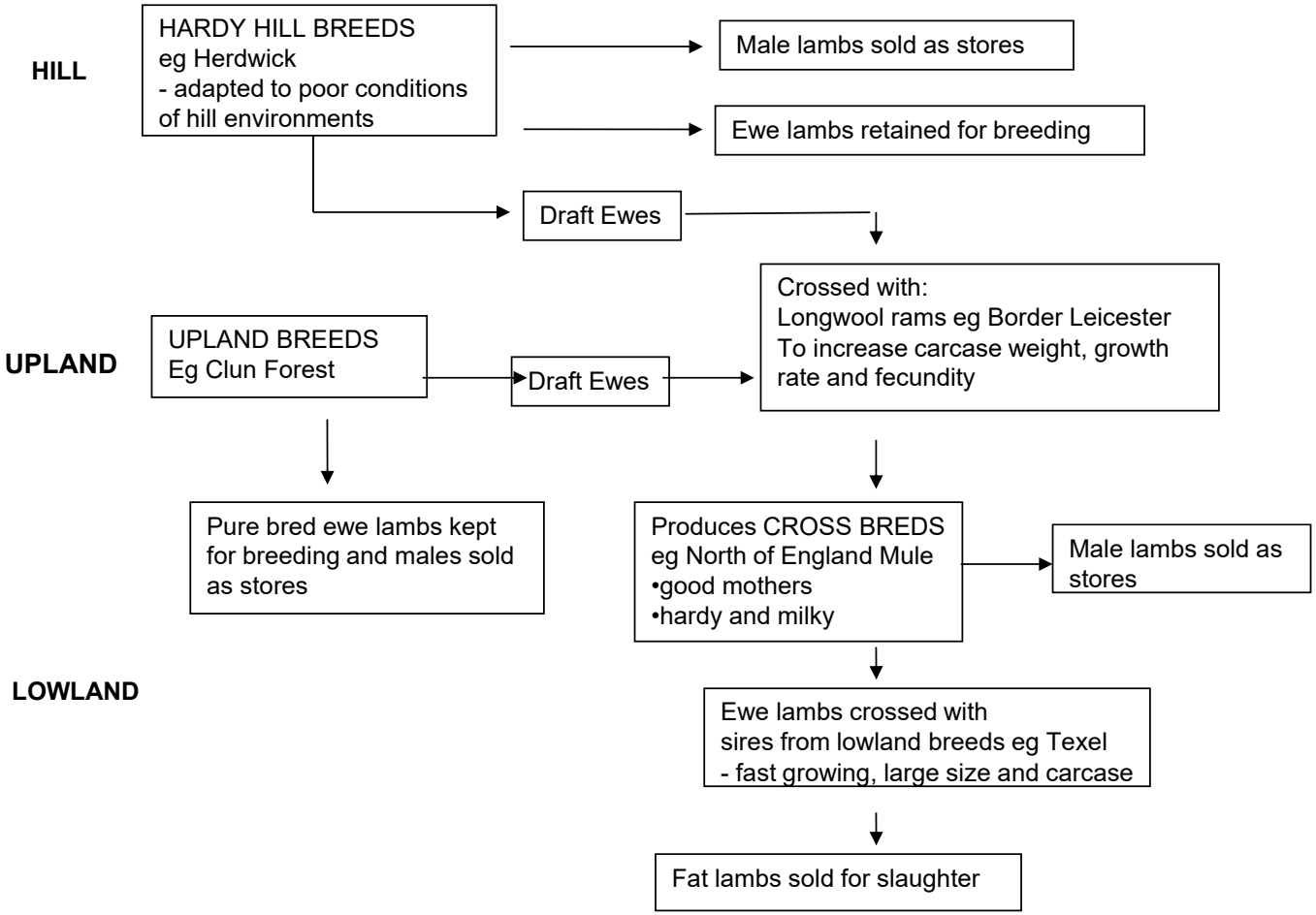
# ECOLOGICAL CONTEXT - what does this produce?

Grazing by upland sheep and its supporting agricultural system has led to the development of a range of plagioclimax habitats.

Using work by Ostermann (1998), nearly 50% of habitats identified in the EU *Habitats Directive 1992* are a product of upland farming systems.



# CASE STUDY – Cumbrian Uplands




**TYPICAL HILL FARM BUSINESS INCOME:**
40% farming
30% diversification
30% subsidy

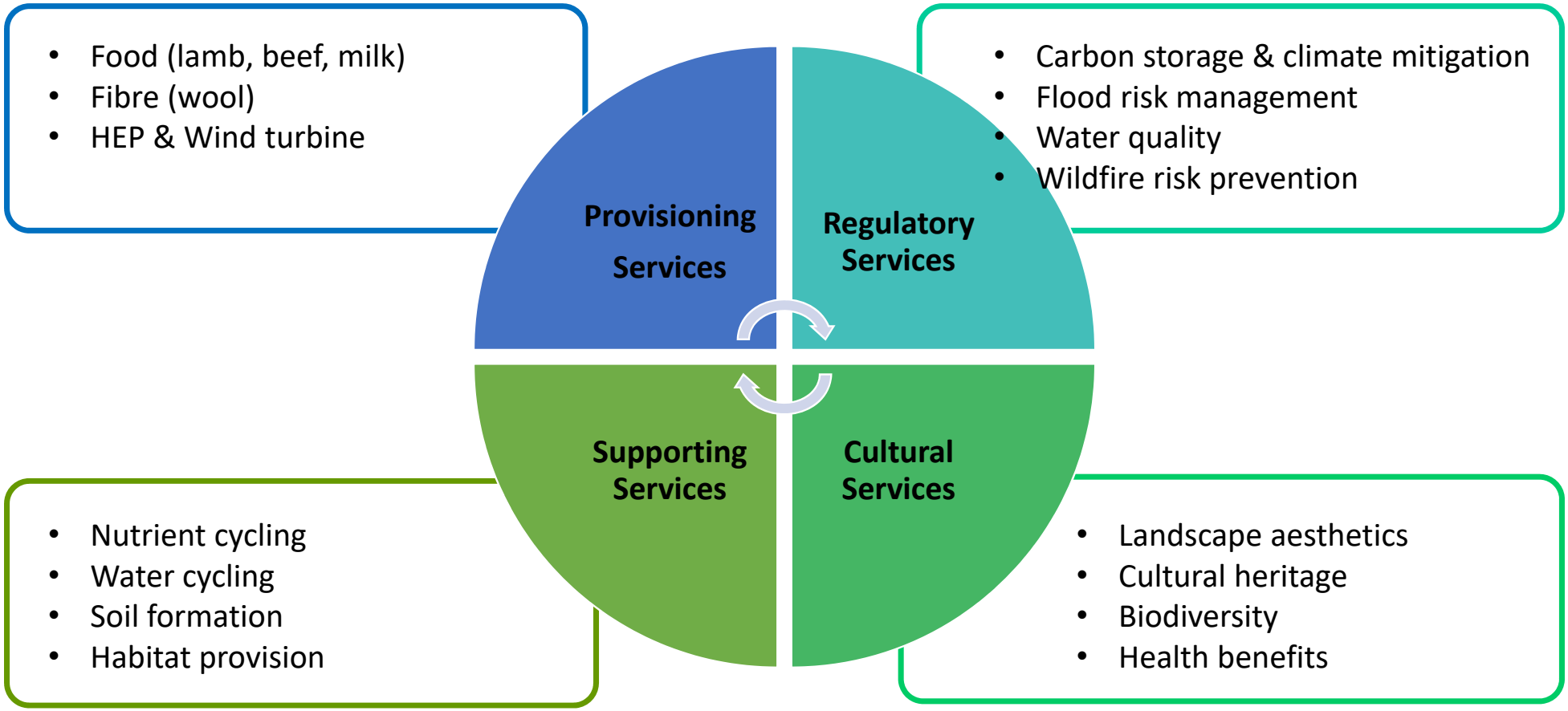
(Wallace & Scott, 2018)

Gross margins range from minus figures to around £10K/ annum.

*Key structures*: inbye, intake and fell

*Key processes*: hefting, gather and stratification

# PRO - sheep & ecosystem services in the Cumbrian uplands



# CONS – upland sheep farming

*'The land has been sheepwrecked.'* Monbiot (30 May 2013).

**Undergrazing** – selective grazing does not control the build up of undesirable plant litter and regrowth does not occur of all plants

**Overgrazing** - 'grazing numbers *adversely to affect the growth, quality and species composition of vegetation*
Soil can be removed via **erosion**

**Poaching** - destruction of soil structure through repetitive hoof movements on one spot as a result of supplementary feeding

**SOCIO-ECONOMIC**

Operating at economic margins of cultivation requires subsidy and negative public perception

Changing consumer demand for less offal

# CHANGING INSTITUTIONAL CONTEXTS

<table>
<tr><th></th><th>Provisioning</th><th>Regulatory</th><th>Supporting</th><th>Cultural</th></tr>
<tr><td>25 year DEFRA plan : ‘A Green Future’</td><td>Sustainable land management (ch1)</td><td>Global environment (ch5)</td><td>Recovering nature (ch2)<br>Resource efficiency (ch4)</td><td>Connecting people (ch3)</td></tr>
<tr><td rowspan="2">DEFRA Agriculture Bill Consultation: ‘Health & Harmony’</td><td>?????</td><td colspan="3">Public money for public goods (ch5)</td></tr>
<tr><td>Reforming the CAP, transition and farming futures (ch2, 3 & 4)</td><td>Risk management and resilience (ch10)<br>Protecting crop health (ch11)</td><td>Enhancing our Envt (ch6)</td><td>Supporting rural communities & remote farming (ch8)</td></tr>
<tr><td rowspan="2">Lake District Partnership ‘Management plan’ supporting World Heritage Status</td><td>Prosperous Economy (theme 2)</td><td></td><td></td><td>World class visitor experience (theme 3)</td></tr>
<tr><td colspan="4">Special landscape, natural and cultural heritage (theme 1)<br>Vibrant communities (theme 4)</td></tr>
<tr><td>Brexit</td><td colspan="4">Published estimates vary between 60 and 95% of farm businesses folding, heavily dependant on leave scenario and nature of transition arrangements</td></tr>
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# SOME CONCLUDING THOUGHTS

Institutional changes in the UK re-inforce the role upland sheep farming has to play in the delivery of a range of ecosystem services.

These are *explicit* tools, rather than the previously implicit attitude of institutional players of the last eighty years of policy.

It still remains unclear whether Brexit will derail the upland sheep farming system – a case of too little, too late.

# REFERENCES


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